Claims

1. Device for sharpening chain saw teeth, in particular a chain saw which is portable and applicable in field, and where the chain is not to be taken off the chain saw blade when sharpened, *characterized in that* a spatial curved carrier (12) is fixed, by means of a fastening means (11), to the upper end of one of arms (2, 3) originating in a body (1), so that said carrier (12) can be optionally shifted on the circular arch along said fastening means (11), said body is provided on the lower side and over the entire length thereof with a groove (5) which penetrates the body (1) in the area between said arms (2, 3) and is connected to a gap (4), the free end of the carrier (12) is connected by means of a mounting (13) to a swivel arm (14) which lies essentially in a plane being predominantly parallel to the plane of the carrier (12), an actuator (15) with a grinding wheel (16) is associated to the free end of the swivel arm (14), that the first, left half (25) of the body (1) is formed with a click bulge (27) on the outside i.e. on the side facing away from a chain blade (6), said click bulge intended for cooperation with a click spring guard (28), an adapter (29) is associated to the inside of the left half (25) of the body (1), said adapter reaching the chain (7) area with an inwardly bent flange (30) provided at the free end thereof, that a flexible adapter (31) is associated to the inside of the right half (26) of the body (1), said adapter reaching the chain (7) area with an inwardly bent flange (32) provided at the free end thereof, that the left half (25) comprises a distance bolt (33) with which the adapter (29) is moved closer to or away from, and that two distance screws (34) extend through the right half (26) and through the flexible adapter (31), that the right half (26) of the body (1) is formed with a recess (35) in the upper part thereof and in the area between the arms (2, 3) of the body (1), a correspondingly formed pressure member (37) which can be swung about an adjusting screw (36) rests in said recess, an adjusting nut (36') mates with said adjusting screw (36) by means of which is determined the sharpening depth in the horizontal direction, that the pressure member (37) comprises a pair of distance bolts (38) arranged practically rectangular to the saw blade (6), when the sharpening device is ready to operate, and at that time they are pressing against the flexible adapter (31) with the ends thereof, and that a click spring guard (28) is located on the pressure member (37) comprising a pair of shoulders (39, 40) arranged in a way that one of them holds a tooth (8) to be

sharpened when the click spring guard (28) cooperates with the click bulge (27).

2. Device according to claim 1, *characterised in that* the flanges (30, 32) of the respective adapter (29, 31) impose from the above upon a pair of pins (10) of each chain (7) link.

3. Device according to claims 1 and 2, *characterised in that* an adjusting nut (36') arranged on said adjusting screw (36) is provided for setting the sharpening depth.

4. Device according to any of claims 1 to 3, *characterised in that* distance bolts (34) are tightened up when mounting the device onto the saw blade (1) so that they press against said saw blade with the ends thereof and stabilize the sharpening device on said saw blade.

5. Device according to any of claims 1 to 4, *characterised in that* the mounting (13) of the spatially curved carrier (12) and the swivel arm (14) is formed by a pair of bearings being held on a constant mutual distance by means of a spacer which is indirectly in contact with the inner ring of each bearing whereas the outer ring of each bearing is held on one side with the head of a bolt carrying said bearings and on the other side with a nut, said spacer holds said bearings in such a distance that the swinging movement of the swivel arm (14) is ensured in every instance without any superfluous friction and clearance.

6. Device according to any of claims 1 to 5, *characterised in that* the mounting of a rotor shaft of the actuator (15) is formed in a manner that the first rotor bearing (22) facing the grinding wheel (16) is fixed with its outer ring in a stator of the actuator (15) whereas its inner ring is held, on one hand, with a sleeve (23) extending to the rotor of the actuator (15), and with a shoulder (24) for receiving the grinding wheel (16), on the other hand, the axial clearance of the said shaft is virtually entirely neutralised therewith.

7. Device according to any of claims 1 to 6, *characterised in that* said first bearing (22)

is preferably a roller bearing.

8. Device according to any of claims 1 to 7, *characterised in that* the slant of the spatially curved carrier (12) with regard to the imaginary plane of the saw teeth (8) in the area of the sharpening comprises about 45°.

9. Device according to any of the preceeding claims, *characterised in that* the actuator (15) is either an electric, a pneumatic or a hydraulic motor.